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Harmonizing Horizons: Impact of Trade and Transport Reforms on Agrifood Value Chains in ECOWAS

Abstract:

The global value chain (GVC) has emerged as a crucial aspect of global trade, influencing international trade patterns and fostering globalization and sustainable development. This paper explores the significance of GVC participation for developing economies considering the Economic Community of West African States (ECOWAS). It examines the challenges hindering trade-oriented development in ECOWAS and the role of policy barriers, particularly non-tariff measures (NTMs), in impacting GVC participation. Despite increasing participation in GVCs, particularly in the agrifood sector, African countries remain minor players in global intermediate trade, primarily engaging in forward participation. The paper underscores the importance of infrastructure development, especially in the transport sector, to enhance connectivity, minimize trade costs, and facilitate economic growth within ECOWAS. The research aims to assess the economic implications of deeper integration on the agrifood value chain in ECOWAS using a dynamic computable general equilibrium (CGE) model, offering insights into enhancing regional and global value addition and addressing trade barriers for comprehensive economic integration within ECOWAS.

I. Background

The relevance of the global value chain (GVC) in the global trade and investment circle has become increasingly pertinent not only because it is reshaping the focus of international trade but also impacting the drive to attaining globalization and sustainable development. GVC constitutes around 70% of international trade and participation is important for all countries irrespective of their development level in other to be integrated into global trade networks (Miroudot, Rouzet, & Spinelli, 2013). Integration and participation in GVC become more crucial for developing regions (countries) such as the Economic Community of West African States (ECOWAS) considering the challenges hindering trade-geared

developments. It is expected that participation in GVC by developing countries should promote both economic and social upgrading[1], however, this is challenged by structural and policy-oriented barriers[2] (African Union Commission, 2022; Evers et al., 2014). Policy barriers involving non-tariff measures (NTMs) are found to have a more negative impact on GVC participation than tariffs (Korwatanasakul & Baek, 2021).

Developing economies, such as members of ECOWAS, are gradually growing their relative participation in the global value chain network (Table 1) and with more participation witnessed in the agrifood sector (Backer & Miroudot, 2013). Recent years have witnessed various value chain initiatives at the African continental and regional level aimed at fostering global and regional value chains based on comparative advantages[3] (African Union Commission, 2022).

Table 1 : Changes in ECOWAS GVC Participation Index.

Year	**2008**	**2010**	**2012**	**2014**	**2016**	**2018**
Index	39	38	42	45	42	47

Source: Author's calculation using UNCTAD-Eora.

At the ECOWAS level, the West Africa Competitiveness Programme4 was adopted and targeted at supporting eight (8) selected value chains to strengthen ECOWAS members' competitiveness and facilitate their integration into regional and global trade5. Virtually all selected value chain products (cassava, textile and garments, mango, information and communications technology, onion, pineapple, hides, and skin and leather)) fall under agrifood and perhaps indicate the importance of agri-food sectors in enhancing the regional value chain in ECOWAS and Africa (African Union Commission, 2022). Despite the

[1] Economic upgrading involves producers moving to high value activities while social upgrading involves workers experience improve conditions and right.(Evers et al., 2014)
[2] high logistic cost, insuffiencent work force development , weak infrastructure and protective non-tariff measures
[3] See page 72 to 73 in African Union Commission (2022) for various initiatives and roadmaps
[4] It is a six-year plan adopted since 2014 under the 11th European Union Development Fund (EDF) Regional Indicative Programme for an amount of €120m.
[5] https://wacomp.projects.ecowas.int/value-chains/

increase in the number of these ambitious initiatives and the presence of some of the drivers of GVCs participation[6], African countries remain a small player in the GVC trade, accounting for around 3 percent of global intermediate trade (African Union Commission, 2022; Zeidy, 2020). African countries mostly engage in forward participation (Figure 1) through exporting of raw natural resources and its agricultural commodities trade (African Union Commission, 2022; Zeidy, 2020). It can be observed that ECOWAS countries involved in forward participation have the highest GVC participation (Liberia, Niger and Nigeria) (Figure 2). It is opined that engaging in backwards GVCs participation, a path Africa should follow, would contribute to enhancing the sophistication and diversification of exports (Kowalski, Gonzalez, Ragoussis, & Ugarte, 2015).

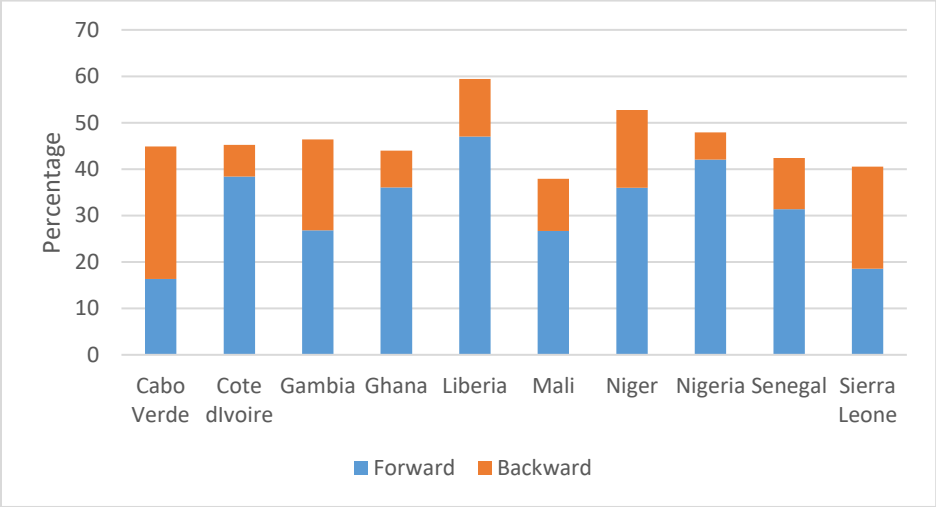

Figure 1: ECOWAS countries' Forward and Backward participation as a percentage of export

Source: Author's calculation using UNCTAD-Eora.

[6] Majority of African countries posses labour endownment and Market size

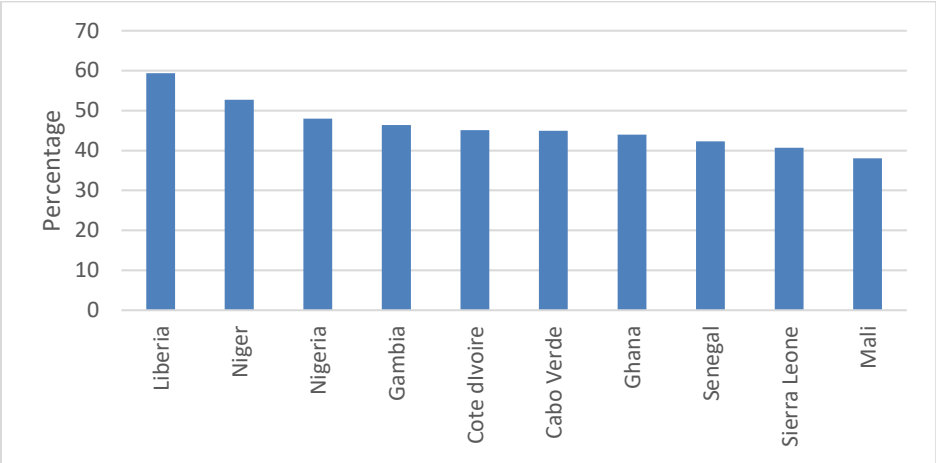

Figure 2: ECOWAS countries' GVC participation as a percentage of export in 2018

Source: Author's calculation using UNCTAD-Eora.

Infrastructure development, especially in the transport sector, is still a major challenge to trade within Africa (Babatunde, 2020). For example, road transport is the primary mode of transportation within Africa while sea and rail transport are the dominant modes for international trade in other parts of the world(Fontagné, Lebrand, Murray, Santoni, & Ruta, 2023). Road transport often leads to trade delays[7] which can be critical to agriculture. Recognizing the intricate linkages with GVC, overcoming these challenges in transport infrastructure would enhance connectivity and minimize trade costs and thus boost enhanced economic growth. Other more recent studies indicate that even if Africa does undertake serious investment in transportation infrastructure, the benefits from trade integration would be dramatically eroded. Besides, improvements in infrastructure connectivity may not be enough when there are trade barriers (both tariff and non-tariff), both transport infrastructure and trade reforms are complementary (Fontagné et al., 2023).

[7] The average land border delays in Africa are 90 hours for the borders without One-Stop-Border Posts (OSBPs) and 50 hours for the borders with OSBPs. Countries in West Africa (ECOWAS) tops the list in Land-border delays (Fontagné, 2023 et al.)

Based on the foregoing, this research is aimed at exploring the economic wide impact of a deeper integration (reduction in non-tariff measures, trade facilitation and transport investment) on the agrifood value chain in ECOWAS using a dynamic computable general equilibrium (CGE) model. Particularly, this research would be useful in identifying agrifood commodities that would promote regional and global value addition for ECOWAS members. It would be interesting to quantify how pertinent it is to address both physical connectivity and trade barriers in order to achieve more comprehensive economic integration and improved trade dynamics within ECOWAS and the cost[8] of Burkina Faso, Mali and Niger leaving ECOWAS.

II Methodology

This study would make use of a dynamic version of the GTAP-VA model (Antimiani, Fusacchia, & Salvatici, 2018) which is a modified version of the static GTAP model documented in (Hertel, 1997). The model is a multi-sector-region model that allows tracking of inter-sectoral movement of factors and the value-added composition of trade flows which is useful in the backward and forward domestic and international linkages of each sector. The GTAP11 database would be employed and baseline data[9] for Gross Domestic Product (GDP), labour and population would be updated from the year 2017 to 2023. GTAP sectors and regions would be aggregated into 18 sectors and 26 regions based one descriptive analysis and information of transport investment[10] served as the basis for the regional and sectoral aggregation.Since ECOWAS members apply Common External Tariff (CET)[11], meaning the non-existence of tariffs among member states, the simulation would involve three counterfactual scenario

[8] Burkina Faso, Mali and Niger are landlocked countries and might pose signiicant issue on trade in agrifood value addition

[9] The projection data from International Monetary Fund (IMF)

[10] World Bank report Container Terminals Concessions in West Africa : https://documents1.worldbank.org/curated/en/919071469608006706/pdf/Container-Terminals-Concessions-Making-the-Most-of-Ports-in-West-Africa.pdf. We have done extensive discriptive analysis but a quick overview can be seen through this link : https://ecotis.ecowas.int/trade-statistics/ecowas-trademap/

[11] https://ecotis.projects.ecowas.int/policy-development/common-external-tariff-cet/
The removal of tariff for signatories to AfCFTA would be considered.

(i) Trade facilitation (TF) by 50% NTM reduction (gradual over 10 years) within ECOWAS within ECOWAS

(ii) Scenario 1 + transportation investment within ECOWAS

(iii) Cost of Bukina Faso, Mali and Niger exiting ECOWAS. (BUMANXIT)

NTMs and trade facilitation would be modeled using the efficiency approach. The efficiency approach (technological change) treats the NTMs as non-rent seeking and this tool is readily available in GTAP as "AMS" variable which represents technological advancement reflecting on the price of imports from a particular trade partner(Fugazza & Maur, 2008). This study would contribute to the discussions on areas, expecialy agrifood, within ECOWAS during discussion on deeper integration with other African countries and rest of the world in order to benefits from a deeper trade integration

III References

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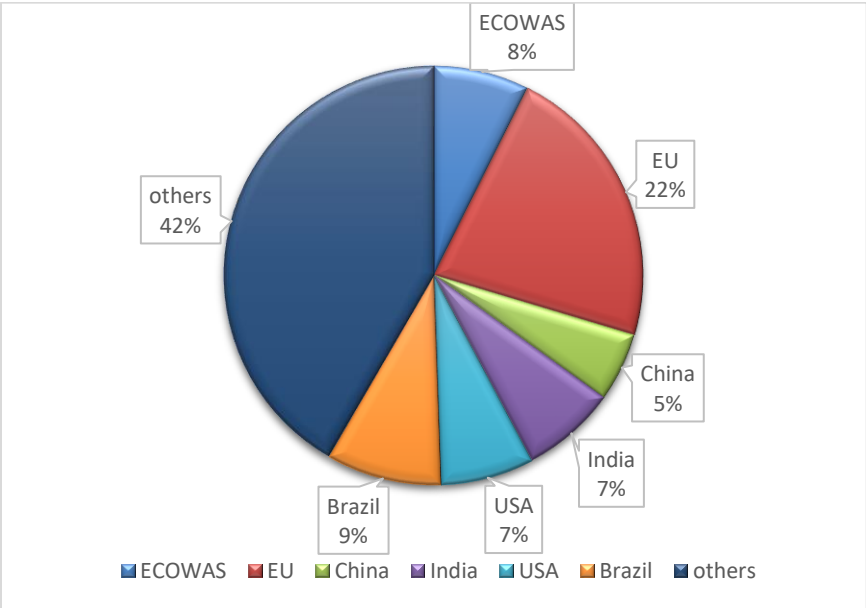
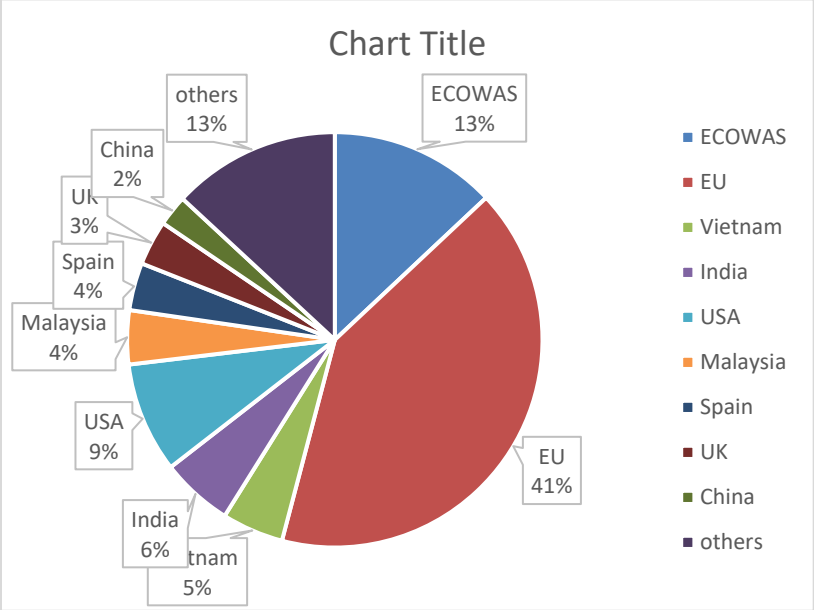
Appendix

Figure A ECOWAS agrifood import Source between 2011-2021 (Percentage)



Source: Authors calculation using International Trade Centre- Trade Map

Figure B ECOWAS agrifood export destination between 2011-2021 (Percentage)



Source: Authors calculation using International Trade Centre- Trade Map

Table A: Top 10 product exported by ECOWAS (2011-2021)

HS 2 Digit	Description	Percent(%)
27	Mineral fuels, mineral oils and products of their distillation; bituminous substances; mineral	61.0
71	Natural or cultured pearls, precious or semi-precious stones, precious metals, metals clad	11.6
18	Cocoa and cocoa preparations	7.3
40	Rubber and articles thereof	2.6
26	Ores, slag and ash	2.5
89	Ships, boats and floating structures	2.0
8	Edible fruit and nuts; peel of citrus fruit or melons	1.8
52	Cotton	1.2
12	Oil seeds and oleaginous fruits; miscellaneous grains, seeds and fruit; industrial or medicinal	0.7
3	Fish and crustaceans, molluscs and other aquatic invertebrates	0.6

Source: Authors calculation using International Trade Centre- Trade Map

Table B : Top 10 products imported by ECOWAS (2011-2021)

HS 2 Digit	Description	Percent(%)
27	Mineral fuels, mineral oils and products of their distillation; bituminous substances; mineral	20.9
84	Machinery, mechanical appliances, nuclear reactors, boilers; parts thereof	14.2
87	Vehicles other than railway or tramway rolling stock, and parts and accessories thereof	10.5
85	Electrical machinery and equipment and parts thereof; sound recorders and reproducers, television	7.8
10	Cereals	7.4
89	Ships, boats and floating structures	4.7
39	Plastics and articles thereof	4.4
73	Articles of iron or steel	3.4
72	Iron and steel	3.0
30	Pharmaceutical products	3.0

Source: Authors calculation using International Trade Centre- Trade Map